REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 1, 4, 5, 15 and16 are currently being amended. Support for amendments can be found throughout the Specification, for example on page 13, lines 17-20. No new matter is added.

After amending the claims as set forth above, claims 1-16 are now pending in this application.

I. Claim Rejections under 35 U. S. C. § 102

Claims 1-3 and 14 are rejected under 35 U.S.C. § 102 (b) as being anticipated by Otsuki (U.S. 2002/0005213). Applicants respectfully traverse.

Independent claims 1 and 5 are amended to recite single-crystalline silicon carbide or polycrystalline silicon carbide that is obtained by a CVD method.

Otsuki teaches a sintered silicon carbide that is manufacture by heating a mixture of the silicon carbide powder and a nonmetallic auxiliary sintering agent (*see* Otsuki, Paragraph [0046]). Otsuki further teaches that a substance which generates carbon in the presence of heat (e.g., organic compounds or carbon black and graphite) is used as the nonmetallic auxiliary sintering agent (*see* Otsuki, Paragraph [0047]-[0049]).

Applicants respectfully submit that inherently such a sintered silicon carbide of Otsuki is completely different from the single-crystalline or polycrystalline silicon carbide obtained by a CVD method. Otsuki teaches cleaning methods of sintered silicon carbide. Ousuki is

silent regarding cleaning silicon carbide product comprising single-crystalline or polycrystalline silicon carbide obtained by a CVD method, as recite in claims 1 and 5.

Claims 2-3 depend from claim 1, and thus are patentable for at least the same reasons as claim 1. Claim 14 depends from claim 5, and thus are patentable for at least the same reasons as claim 5.

For at least the above reasons, Applicants respectfully request a withdrawal of the section 102 rejections.

II. Claim Rejections under 35 U. S. C. § 103

Claims 4-12 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Otsuki. Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Otsuki in view of Morgan (U.S. 2004/0029392). Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Otsuki in view of Ohmi '157 (U.S. 6,348,157), and as being unpatentable over Otsuki in view of Morgan and further in view of Ohmi '157. Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Otsuki in view of Chinone (Chinone et al., "Applications of High Purity SiC Prepared by Chemical Vapor Deposition"). Applicants respectfully traverse.

Independent claim 1 is amended to recite that the single-crystalline silicon carbide or the polycrystalline silicon carbide that is obtained by a CVD method is cleaned only by an acidic solution, the single-crystalline silicon carbide or the polycrystalline silicon carbide having a surface with a concentration of metal impurities equal to or less than 1×10^{11} atoms/cm^2." Independent claim 4 is amended to recite immersing the single-crystalline silicon carbide or the polycrystalline silicon carbide that is obtained by a CVD method in an acid. Independent claim 5 is amended to recite that cleaning the single-crystalline silicon carbide or the polycrystalline silicon carbide that is obtained by a CVD method only by an acidic solution to reduce surface metal impurities to $1x10^{11}$ atoms/cm^2 or less.

As explained above, Otsuki fails to teach the single-crystalline silicon carbide or the polycrystalline silicon carbide that is obtained by a CVD method, as recited in the independent claims. Further, Applicants respectfully submit that it is not obvious to an

ordinary skill in the art to modify Otsuki by Morgan, Ohmi '157 and Chinone, and even if combined, the combination of Otsuki, Morgan, Ohmi '157 and Chinone would still fail to teach the above recited features of claims 1, 4 and 5 for at least the reasons that follows.

A. Claimed Features Provide Unexpected Results

As shown in Paragraph 12 and Table 1 of Sano Declaration under 37 C.F.R. § 1.132, silicon carbide samples obtained by a CVD method, after being cleaned by the cleaning method B according to one embodiment of the instant application, have surface metal impurity concentrations of less than 1×10^{11}(atom/cm^2). On the other hand, if the cleaning method taught in Otsuki Publication is used for cleaning the silicon carbide obtained by a CVD method, at least some of the resulting polycrystalline silicon carbide samples would have a surface metal impurity concentration of greater than 1×10^{11}(atom/cm^2). In other words, the cleaning method of Otsuki Publication is inferior to the cleaning method disclosed in the instant application.

Further, the Fe surface concentration of the comparative Example 2 of Otsuki Publication (*see* Otsuki Publication, Table 1) is different from that of the above-mentioned Sample A1 and A2, showing that the sintered silicon carbide mentioned in Otsuki Publication is different in properties from the silicon carbide obtained by the CVD method, as recited in the independent claims 1, 4 and 5 (*see* Sano Declaration, Paragraph 13).

Thus, Applicants respectfully submit that it is indeed surprising and unexpected that the claimed cleaning method can reduce the surface metal impurities of the single-crystalline silicon carbide or polycrystalline silicon carbide that is obtained by a CVD method to 1×10^{11} atoms/cm^2 or less, as claimed in the independent claims 1, 4 and 5.

B. Morgan, Ohmi '157 and Chinone Fail To Cure The Deficiencies Of Otuski

Morgan and Ohmi '157 are cited for disclosing other features of the claims, but fail to cure the above deficiencies of Otsuki. Specificially, Morgan and Ohmi '157 are related to silicon, rather than silicon carbide, and are silent on a single-crystalline or polycrystalline

silicon carbide having a surface metal impurities concentration of equal to or less than 1×10^{11} atoms/cm^2, as recited in independent claims 1, 4 and 5.

Chinone teaches separating silicon carbide layers from a graphite base member. However, Chinone is silent regarding the cleaning methods of the silicon carbide material, let along a cleaning method that can reduce the surface metal impurities of the single-crystalline or polycrystalline silicon carbide obtained by a CVD method to 1×10^{11} atoms/cm^2 or less, as claimed in the independent claims 1, 4 and 5.

For at least the above reasons, Otsuki, Morgan, Ohmi '157 and Chinone, either alone or combined, fail to teach that the claimed cleaning method can reduce the surface metal impurities of the single-crystalline silicon carbide or the polycrystalline silicon carbide obtained by a CVD method to 1×10^{11} atoms/cm^2 or less, as claimed in the independent claims 1, 4 and 5.

Claims 2- 3 depend from claim 1, and thus are patentable for at least the same reasons as claim 1. Claims 6-16 depend from claim 5, and thus are patentable for at least the same reasons as claim 5.

III. Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If

any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 8/22/2010 By _____

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